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10/576,589	09/05/2006	David Malcolm Leathwick	JAMES68.015APC	7265

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EXAMINER	
BUCKLEY, AUDREA	

ART UNIT	PAPER NUMBER
1611	

NOTIFICATION DATE	DELIVERY MODE
03/05/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/576,589	LEATHWICK ET AL.	
	Examiner	Art Unit	
	AUDREA J. BUCKLEY	1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/22/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

Acknowledgement is made of Applicants' amendments to the claims filed 10/22/2009. Claim 22 is canceled.

Claims 1-21 and 25 are pending and considered in the instant Office action.

Withdrawn Claim Rejections

The rejection of claim 22 under 35 U.S.C. 101 is withdrawn as this claim has been canceled. The rejection of claim 22 under 35 U.S.C. 112 is withdrawn as this claim has been canceled.

The rejection of claims 1, 2, 4-8, 10, 11, 14, 17, and 19 under 35 U.S.C. 102(b) as being anticipated by Hennessy et al. is withdrawn in light of Applicants' arguments filed 10/22/2009.

Subsequently, the rejection of claims 1, 2, 3, 20, 21, and 25 under 35 U.S.C. 103(a) as being unpatentable over Hennessy in view of Whitehead is withdrawn. The rejection of claims 1 and 7-9 under 35 U.S.C. 103(a) as being unpatentable over Hennessy is withdrawn. The rejection of claims 1 and 10-12 under 35 U.S.C. 103(a) as being unpatentable over Hennessy in view of IVS Annual Index of Veterinary Products is withdrawn. The rejection of claims 1 and 13 under 35 U.S.C. 103(a) as being unpatentable over Hennessy in view of Sanyal is withdrawn. The rejection of claims 1, 15, 16, and 18 under 35 U.S.C. 103(a) as being unpatentable over Hennessy in view of Lewis is withdrawn.

The provisional rejection of claims 1 and 3 over claims 1-4 and 20 of copending Application No. 11908708 is withdrawn.

New Grounds of Rejection

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of

35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4-8, 10, 11, 14, 17, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al. (AU 52162/96 A, filed May 1996, see IDS filed 4/21/2006) in view of Hennessy et al. (US 5,840,324, patented Nov. 1998) as evidenced by Lau et al. (WO 2004/069242 A1).

Regarding claims 1, 6-8, and 10, Forster et al. teaches synergistic compositions of benzimidazoles and abamectin (a macrocyclic lactone) as anthelmintics including nematocidal compositions. Specifically, the formulation effectively targets ascarids, hookworms, whipworms, and heartworms upon the combination of abamectin (dosage between 5 and 15 ug per kg of animal body weight) and benzimidazole or pro-benzimidazole (dosage between 15 and 30 mg per kg of animal body weight) (see page 3, paragraph 3); therefore and further regarding claim 2, these active agents have different activities. As to claim 21, the first Example of the invention demonstrates a palatable tablet in chewable form as a delivery device (see page 4, paragraph 4).

Regarding claim 1, Forster et al. do not disclose an intra-ruminal bolus delivery device, a stepwise method, or efficacy duration.

Nonetheless, Hennessy et al. teach a particulate composition for combating and preventing parasite infestation of ruminant animals. The anti-parasite composition comprises a benzimidazole or a macrocyclic lactone, for example, where the active agent is dispersed in a medium such that the solubility characteristics of the composition ensure that, following oral administration,

controlled amounts of the anti-parasite agent become available to the parasite, either directly or by absorption into the ruminant blood plasma during passage of the composition through the rumen (see column 3, line 24). Similarly and further regarding claims 4 and 6, Lau et al. teach anthelmintic compositions comprising benimidazoles, macrocyclic lactones, and a therapeutically acceptable carrier wherein the formulation demonstrates "excellent control (>99.9% reduction) or a mixed gastrointestinal strongly burden as assessed" (page 17, paragraph 1). That is, Lau evidences that the parasite burden on an animal necessarily would happen upon administration of the anthelmintic compositions. More specifically, Hennessy et al. show time release data indicating that the active ingredient ivermectin, which was chosen as a representative active agent for time release function in vivo studies, was still being released after 80 hours, or 3.3 days (Figure 7, Sheet 7 of 11; column 5, line 59). As to claim 5, Hennessy et al. teach that the invention "leads to the elimination of up to 30% more benzimidazole-resistant worms than is achieved by the same dosage of a conventional benzimidazole preparation," (column 6, line 24). As to claim 11, Hennessy et al. specifically claim albendazole as the benzimidazole species and teach this active agent in a particular embodiment (see column 10, line 51; see column 6, line 33, Example 1). As to claim 14, Hennessy et al. taught that the anti-parasitic formulations are to be used with sheep (see column 6, line 22). As to claim 17, Hennessy teach Nematodirus explicitly as a species against which both the benzimidazole agent (see column 3, line 60) and the macrocyclic lactone (see column 4, line 6) agents are active. As to claim 19, Hennessy et al. disclose a

composition which is dispersed in a proteinaceous matrix which undergoes staged degradation allowing controlled release of the anti-parasitic active agent (see column 5, line 15).

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hennessy et al. with the teaching of Forster et al. One would have been motivated to do so to implement the sustained efficacy resulting from the oral administration of anthelmintic actives such as benzimidazoles to ruminant animals as taught by Hennessy et al. (see abstract, in particular) into the anti-parasite compositions of Forster et al. .

Claims 3, 9, 20, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al. (AU 52162/96 A, filed May 1996, see IDS filed 4/21/2006) in view of Hennessy et al. (US 5,840,324, patented Nov. 1998) as evidenced by Lau et al. (WO 2004/069242 A1) as applied to claims 1, 2, 4-8, 10, 11, 14, 17, 19, and 21 above, and further in view of Whitehead (US 6,030,637, patented Feb. 2000).

The teachings of Forster et al. and Hennessy et al. are set forth above.

Neither of these references explicitly teaches the dosage details as in the instant claims (i.e., continuous rate as in claims 3 and 25, dosage quantity as in claim 9, maximum integral dose as in claim 20).

Nonetheless, Whitehead teaches a bolus of elements, each having a degradable outer sheath and a core of the active formulation (see column 2, line

18) for deposition of the active agents to a ruminant (see column 1, line 19; column 1, line 26). More specifically, Whitehead teaches the option of utilizing boli which release the active agent continuously as a function of time (see column 1, line 19). As to claim 9, Whitehead teaches an embodiment of the invention in which abamectin is used in a dose rate of 0.2 mg/kg, in combination with other anthelmintic active agents, for a formulation treating parasites in sheep (see page 36, Table 33: Treatment table, Group 2, dose rate). As to claim 20, Whitehead teaches an embodiment of the invention in which a bolus comprising a plurality of discrete bolus elements releases the biologically active material at different respective intervals based on the adapted sheath formulation (see column 4, lines 22-30); further, the drug can be administered in integral units over a few hours to a period of a few months (see column 5, lines 1-10). Therefore, a formulation released in a pulse fashion necessarily has a maximum integral dose.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bolus-related teachings of Whitehead in order to formulate a controlled delivery device and dosage amount for the anthelmintic compositions of Forster et al. and Hennessy et al. One would have been motivated to do so in order to improve the efficacy of the formulation by controlling the delivery so as to increase dosage or decrease dosage as a function of delivery time as taught by Whitehead. Likewise, one would have been motivated to look to the quantity of anthelmintically effective active agents in the formulation of Whitehead since these formulations combine

active agents for a variety of animal sizes including sheep whereas the formulation of Forster et al. focuses on dosages for dogs and whereas the formulation of Hennessy et al. contains only a single active agent.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al. (AU 52162/96 A, filed May 1996, see IDS filed 4/21/2006) in view of Hennessy et al. (US 5,840,324, patented Nov. 1998) as evidenced by Lau et al. (WO 2004/069242 A1) as applied to claims 1, 2, 4-8, 10, 11, 14, 17, 19, and 21 above, and further in view of IVS Annual Index of Veterinary Products (see IDS, 5/31/2007).

The teachings of Forster et al. and Hennessy et al. are delineated above. Neither of these references teaches the particular dosage of albendazole as in pending claim 12.

However, the IVS Annual Index teaches that 4.75 mg/kg of albendazole is an effective dosage quantity for rendering anti-parasitic effects in sheep.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to utilize the dosage quantity of albendazole as taught by the IVS Annual Index in the formulations of Forster et al. and Hennessy et al. One would have been motivated to do so in order to impart the known benefits of such a dosage while expecting to minimize harmful side effects of an overdose, particularly since the skilled artisan would have considered the IVS Annual Index a reference source for dosage details associated with known active agents such as anti-parasites, and, more specifically, albendazole.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al. (AU 52162/96 A, filed May 1996, see IDS filed 4/21/2006) in view of Hennessy et al. (US 5,840,324, patented Nov. 1998) as evidenced by Lau et al. (WO 2004/069242 A1) as applied to claims 1, 2, 4-8, 10, 11, 14, 17, 19, and 21 above, and further in view of Sanyal et al. (Vet. Res. Comm. *20*, 1996, 461-468).

The teachings of Forester and Hennessy are delineated above. Neither of these references teaches the particular anthelmintic compound that is tricalbendazole.

However, Sanyal et al. teach that tricalbendazole is an effective low-level intraruminal anti-fluke anti-parasite agent (see abstract, in particular).

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to substitute tricalbendazole as the anthelmintic agent as taught by Sanyal et al. into the formulations of Forester and Hennessy which also utilize known anthelmintic active agents. One would have been motivated to do so in order to impart the known anti-parasite effects of tricalbendazole as well as its ability to bind to albumin better than nematocidial benzimidazoles such as oxfendazole or fenbendazole (see page 465, Discussion, paragraph 1).

Claims 15, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al. (AU 52162/96 A, filed May 1996, see IDS

filed 4/21/2006) in view of Hennessy et al. (US 5,840,324, patented Nov. 1998) as evidenced by Lau et al. (WO 2004/069242 A1) as applied to claims 1, 2, 4-8, 10, 11, 14, 17, 19, and 21 above, and further in view of Sanyal et al. (Vet. Res. Comm. *20*, 1996, 461-468).

The teachings of Forester and Hennessy are delineated above. Neither of these references teaches the active agent release time period as in claims 15 and 16 or the ectoparasite as the particular parasite as in claim 18.

Lewis teaches the controlled release of antiparasitic agents in animals wherein the duration of action ranges from less than a week to several months. In a preferred embodiment, the microspheres are designed to afford antiparasitic effect in animals over a period of a few days to one year (see column 12, line 54). Lewis further teaches that the duration of action can be easily controlled by manipulation of the composition, polymer:drug ratio, and microsphere size (see column 12, lines 55-58). These formulations include ectoparasitic agents effective against species including ticks, mites, lice, fleas, etc. (see column 3, line 55).

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to incorporate the active agent release time period preferred by Sanyal et al. and the target ectoparasite as named by Sanyal et al. into the formulations and processes of Forster et al. and Hennessy et al. One would have been motivated to do so in order to control the dosage and delivery time to target parasites such as ectoparasites as taught by Sanyal et al. as is routine in the optimization of a pharmaceutical formulations.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3, 15, and 16 provisionally are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 and 20 of copending Application No. 11908708. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the features of instant claim 1 are included in copending application claims 1-4 which outline a composition included in the instantly claimed method, although the copending application further limits the formulation components and expands the time period of active agent release. Likewise,

claims 15 and 16 of the instant invention are drawn to the same subject matter as claims 1 and 2 of the copending application, where the duration of active agent release is obvious in view of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicants' arguments regarding the rejection of claims 1, 2, 4-8, 10, 11, 14, 17, and 19 under 35 U.S.C. 102(b) are persuasive since Hennessey et al. does not teach in a single embodiment of the invention having all of the limitations as in instant claim 1. For this reason, this rejection has been withdrawn as indicated above. As such subsequent rejections relying on this rejection have been withdrawn.

As to Applicants' arguments regarding the rejection of claims 1, 2, 3, 20, 21, and 25, Applicant takes the position that Whitehead teaches away from continuous release systems. In response, the relevance of Whitehead is maintained since Whitehead teaches that continuous release systems are known to have been successful in the art. It is acknowledged that Whitehead teaches embodiments of the invention demonstrating the release of active agents through pulsed release systems, however Whitehead expressly teaches that "Both types of release mechanisms have their advantages…" (see column 1, lines 56-65).

As to Applicants' arguments regarding the rejection of claims 1 and 7-9 as well as the rejection of claims 1 and 10-12, and the rejection of claims 1 and 13,

these rejections are withdrawn in light of Applicants' arguments pertaining to claim 1 as stated above.

As to the rejection of claims 1, 15, 16, and 18, this rejection has been withdrawn in light of Applicants' arguments pertaining to claim 1 as stated above. Applicants further take the position against the Lewis reference that it would not have been obvious to utilize the release characteristics of a bolus implanted under the skin in an intra-ruminal bolus. The relevance of this reference is maintained since Lewis, like Forster et al. and Hennessy et al., teaches formulations and methods for antiparasitic agents in animals.

The double patenting rejection is newly presented as no longer citing *In re Schneller.*

Conclusion

No claims are found allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AUDREA J. BUCKLEY whose telephone number is (571)270-1336. The examiner can normally be reached on Monday-Thursday 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Landau can be reached on (571) 272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AJB/

/Sharmila Gollamudi Landau/
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